

Nevada

Nevada had the thirteenth smallest population and the fifteenth lowest utility generating capability in 1996. Nonutility capability as a share of total generating capability was relatively large at 11.7 percent, the thirteenth highest total in the United States. At an average cost of 5.95 cents per kilowatthour, the price of electricity in Nevada was the nineteenth lowest in the United States, well below the national average cost of 6.86 cents per kilowatthour.

The State has a significant amount of generating capability fired by coal, gas, and hydroelectric sources, but no nuclear generating units. Half is coal-fired, 31 percent is gas-fired, and almost 20 percent is hydroelectric. This can be attributed to Nevada's close proximity to western coalbeds, to Pacific gas resources, and to its share of the Hoover Dam, the second-largest hydroelectric generating station in the Nation, as well as other hydroelectric facilities. (Although the Dam is actually larger than Southern California Edison's coal-fired Mohave plant, for purposes of this report it does not outrank Mohave because Hoover's capability, generation, and other statistics are split equally between Nevada and Arizona since the Dam and its peripheral holdings and property are located on the border between both States.) Even split in half, Hoover Dam's net capability ranks it as the second largest plant in the State. The third and fourth largest plants, Clark which is gas-fired and Reid Gardner which is coal-fired, are operated by the Nevada Power Company, the utility with the largest generating capability in the State. Most of Nevada's largest plants, no matter the fuel source, lie in relatively close proximity to each other in the southeastern part of the State near Las Vegas.

Nevada's coal-fired electric utilities receive most of their coal (64 percent) from the Black Mesa coal field in northeastern Arizona. There is a unique transportation link between the mine in Arizona and the Mohave power plant in southeastern Nevada. It is a 273-mile long, 18-inch pipeline which is the only long-distance slurry pipeline in the Nation. Coal is delivered as a slurry—a mixture of half finely ground coal and half

water, by weight—and is pumped at a rate of about 3.5 miles per hour.¹ Another 32 percent of coal shipped to the State's utilities was mined in Utah and delivered by railroad. The remaining 4 percent was mined in Wyoming and Colorado and also arrived by railroad.²

In 1986, coal units represented 48.3 percent of Nevada's utility generating capability and 73.0 percent of its utility net generation. In 1996, the coal share of capability rose to 49.7 percent, while the net generation share had fallen to 68.6 percent. Gas capability and generation, on the other hand, were 20.5 percent and 2.8 percent respectively, in 1986. By 1996, the gas shares had risen to 30.9 percent and 20.9 percent, respectively. Retail sales by Nevada utilities almost doubled when comparing 1996 levels with those of 1986.

Like all States west of Kansas, Nevada had no generating units that were cited in Title IV of the Clean Air Act Amendments of 1990 to begin compliance with stricter emissions standards for sulfur dioxide and nitrogen oxides. In fact, the concentration of these pollutants as well as carbon dioxide in the State caused Nevada to be ranked as one of the 10 lowest emitters in the Nation.

Nevada has been one of the leaders in the move toward a deregulated environment for electricity. The fact that there is no nuclear power in the State and, therefore, minimum stranded costs, may account for the rather aggressive approach to restructuring Nevada's electric power industry. Legislation was passed in July 1997 that directs the State's Public Utility Commission (PUC) to establish a market in which customers have access to potentially competitive electric services from alternative suppliers no later than December 31, 1999. In June 1998, the PUC issued an order that defines which utility-related services, aside from selling electricity, could be open to competition. These areas include metering, billing, and customer service. In July 1998, Sierra Pacific and Nevada Power filed a joint merger application with the PUC wherein the utilities proposed to sell their generation assets. They filed their application with the Federal Energy Regulatory Commission in October 1998.³

¹Energy Information Administration, *State Coal Profiles*, DOE/EIA-0576 (Washington, DC, January 1994), p. 11.

²Energy Information Administration, *Coal Distribution January-December 1996*, DOE/EIA-0125(96/4Q) (Washington, DC), Table 34.

³Energy Information Administration, Status of State Electric Utility Deregulation Activity, http://www.eia.doe.gov/cneaf/electricity/chg_str/tab5rev.html.

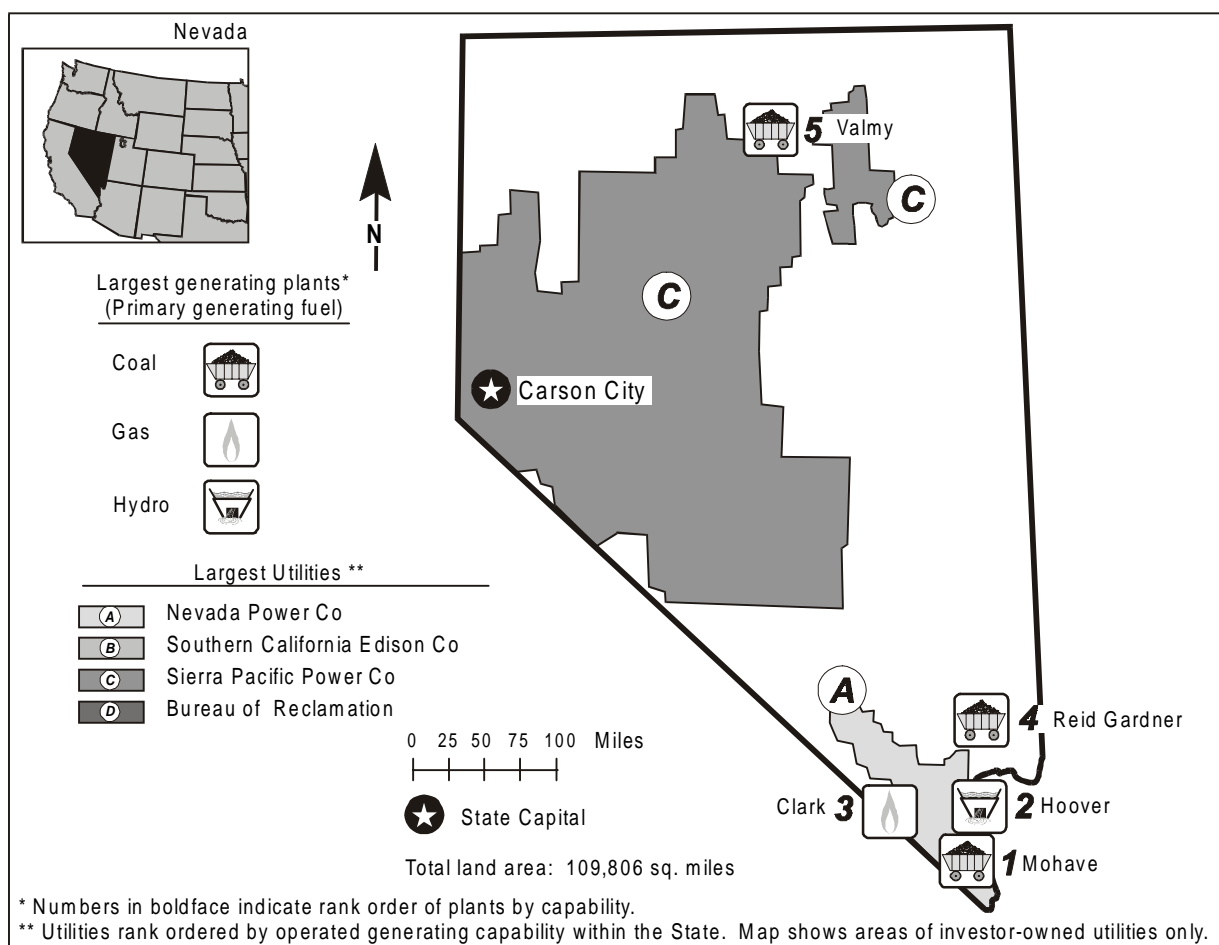


Table 1. 1996 Summary Statistics

Item	Value	U.S. Rank	Item	Value	U.S. Rank
NERC Region(s)		WSCC	Utility		
Net Exporter or Importer		Exporter	Capability (MWe)	5,643	36
State Primary Generating Fuel		Coal	Generation (MWh)	21,362,057	39
Population (as of 7/96)	1,600,810	38	Average Age of Coal Plants	21 years	
Average Revenue (cents/kWh)	5.95	^a 19	Average Age of Oil-fired Plants	34 years	
Industry			Average Age of Gas-fired Plants	18 years	
Capability (MWe)	6,392	^b 32	Average Age of Nuclear Plants	--	
Generation (MWh)	25,619,540	^b 34	Average Age of		
Capability/person			Hydroelectric Plants	55 years	
(KWe/person)	3.99	^b 10	Average Age of Other Plants . . .	--	
Generation/person			Nonutility^c		
(MWh/person)	16.00	^b 13	Capability (MWe)	749	21
Sulfur Dioxide Emissions			Percentage Share of Capability	11.7	13
(Thousand Short Tons)	52	36	Generation (MWh)	4,257,483	20
Nitrogen Oxide Emissions			Percentage Share of Generation	16.6	12
(Thousand Short Tons)	73	34	-- = Not applicable.		
Carbon Dioxide Emissions					
(Thousand Short Tons)	22,183	35			
Sulfur Dioxide/sq. mile (Tons)	0.47	43			
Nitrogen Oxides/sq. mile (Tons)	0.67	44			
Carbon Dioxide/sq. mile (Tons)	202.02	45			

Table 2. Five Largest Utility Plants, 1996

Plant Name	Type	Operating Utility	Net Capability (MWe)
1. Mohave	Coal	Southern California Edison Co	1,580
2. Hoover	Hydro	Bureau of Reclamation	1,037
3. Clark	Gas/Other	Nevada Power Co	684
4. Reid Gardner	Coal	Nevada Power Co	605
5. Valmy	Coal	Sierra Pacific Power Co	532

Table 3. Top Four Utilities with Largest Generating Capability, and Type, Within the State, 1996
(Megawatts Electric)

Utility	Net Summer Capability	Net Coal Capability	Net Oil Capability	Net Gas Capability	Net Nuclear Capability	Net Hydro/Other Capability
A. Nevada Power Co	1,726	605	--	1,121	--	--
B. Southern California Edison Co ...	1,580	1,580	--	--	--	--
C. Sierra Pacific Power Co	1,300	622	46	622	--	9
D. Bureau of Reclamation	1,037	--	--	--	--	1,037
Total	5,643	2,807	46	1,743	--	1,046
Percentage of Industry Capability	88.3	--	--	--	--	--

-- = Not applicable.

Figure 1. Utility Generating Capability by Primary Energy Source, 1996

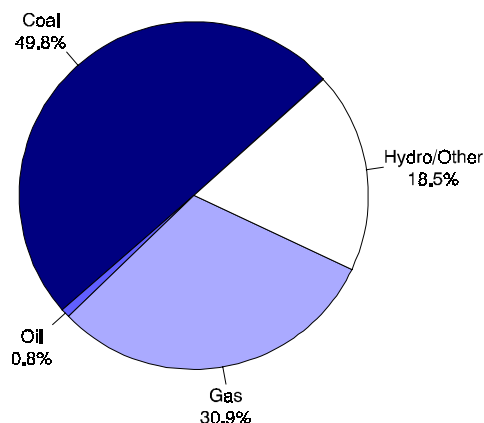


Figure 2. Utility Generation by Primary Energy Source, 1996

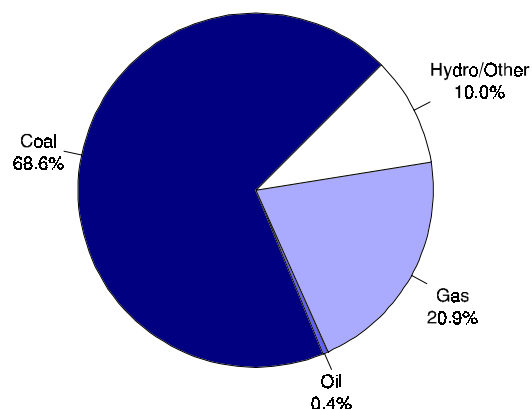


Figure 3. Energy Consumed at Electric Utilities by Primary Energy Source, 1996

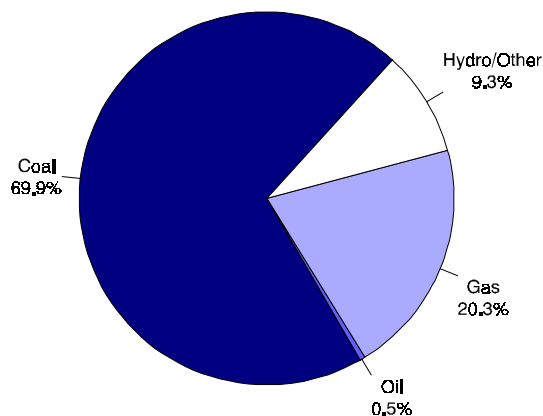


Table 4. Electric Power Industry Generating Capability by Primary Energy Source, 1986, 1991, and 1996
(Megawatts Electric)

Fuel	1986	1991	1996	Percentage Share 1986	Percentage Share 1991	Percentage Share 1996
Coal	2,692	2,692	2,807	48.3	52.5	49.7
Oil	79	260	46	1.4	5.1	0.8
Gas	1,142	1,142	1,743	20.5	22.3	30.9
Nuclear	--	--	--	--	--	--
Hydro/Other	1,659	1,031	1,046	29.8	20.1	18.5
Total Utility	5,572	5,125	5,643	100.0	100.0	100.0
Total Nonutility	34	W	749	--	--	--

-- = Not applicable. W = Withheld.

Table 5. Electric Power Industry Generation of Electricity by Primary Energy Source, 1986, 1991, and 1996
(Thousand Kilowatthours)

Fuel	1986	1991	1996	Percentage Share 1986	Percentage Share 1991	Percentage Share 1996
Coal	14,489,639	16,365,730	14,656,868	73.0	78.2	68.6
Oil	225,809	238,321	93,811	1.1	1.1	0.4
Gas	558,257	1,956,571	4,468,076	2.8	9.4	20.9
Nuclear	--	--	--	--	--	--
Hydro/Other	4,584,406	2,361,817	2,143,302	23.1	11.3	10.0
Total Utility	19,858,111	20,922,439	21,362,057	100.0	100.0	100.0
Total Nonutility	232,474	W	4,257,483	--	--	--

-- = Not applicable. W = Withheld.

Table 6. Electric Power Industry Consumption by Primary Energy Source, 1986, 1991, and 1996
(Quadrillion Btu)

Fuel	1986	1991	1996	Percentage Share 1986	Percentage Share 1991	Percentage Share 1996
Coal	0.158	0.176	0.166	73.2	78.0	69.9
Oil	0.003	0.003	0.001	1.5	1.2	0.5
Gas	0.007	0.022	0.048	3.2	9.9	20.3
Nuclear	--	--	--	--	--	--
Hydro/Other	0.048	0.024	0.022	22.1	10.9	9.3
Total Utility	0.217	0.225	0.237	100.0	100.0	100.0
Total Nonutility	(s)	W	0.026	--	--	--

-- = Not applicable. W = Withheld. (s) = Nonzero value less than 0.0005.

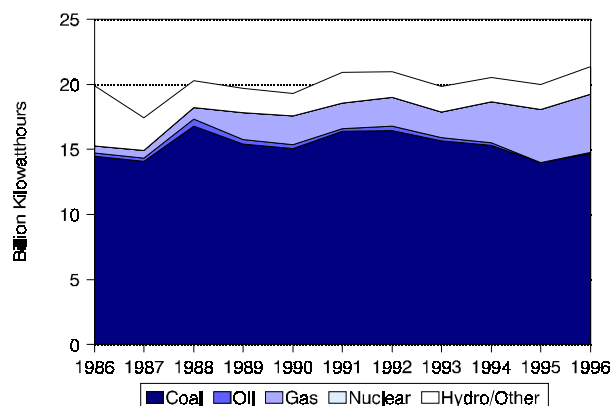
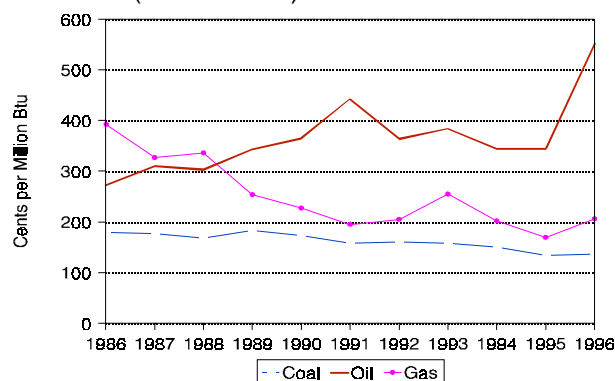
Figure 4. Utility Generation of Electricity by Primary Energy Source, 1986-1996**Figure 5. Utility Delivered Fuel Prices for Coal, Oil, and Gas, 1986-1996**
(1996 Dollars)

Table 7. Utility Delivered Fuel Prices for Coal, Oil, and Gas, 1986, 1991, and 1996
(Cents per Million Btu, 1996 Dollars)

Fuel	1986	1991	1996	Annual Growth Rate 1986-1996 (Percent)
Coal	179.6	158.1	136.6	-2.7
Oil	272.2	442.0	551.5	7.3
Gas	392.0	194.9	206.0	-6.2

Table 8. Electric Power Industry Emissions Estimates, 1986, 1991, and 1996
(Thousand Short Tons)

Emission Type	1986	1991	1996	Annual Growth Rate 1986-1996 (Percent)
Sulfur Dioxide	57	55	52	-0.9
Nitrogen Oxides ^d . .	58	65	73	2.4
Carbon Dioxide ^d . . .	18,263	20,842	22,183	2.0

Figure 6. Estimated Sulfur Dioxide Emissions, 1986-1996

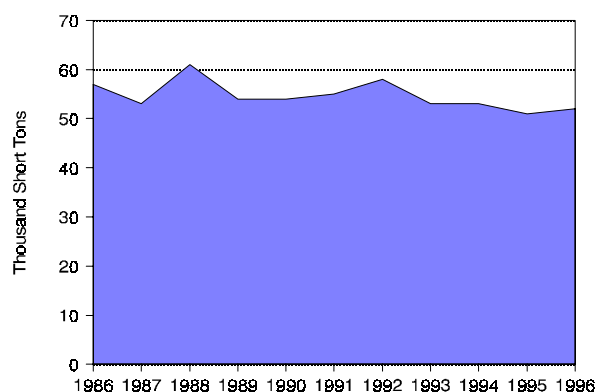


Figure 7. Estimated Nitrogen Oxide Emissions, 1986-1996

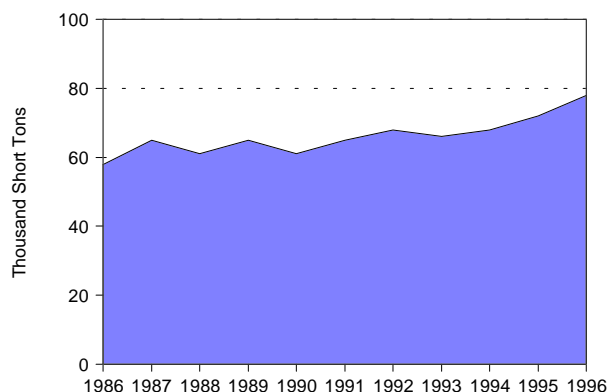


Figure 8. Estimated Carbon Dioxide Emissions, 1986-1996

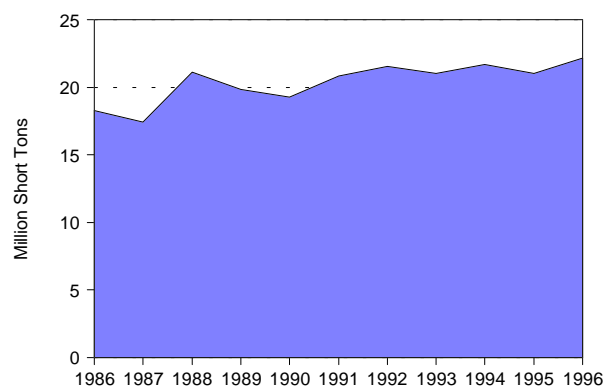


Table 9. Utility Retail Sales by Sector, 1986, 1991, and 1996
(Megawatthours)

Sector	1986	1991	1996	Annual Growth Rate 1986-1996 (Percent)	Percentage Share 1986	Percentage Share 1991	Percentage Share 1996
Residential . .	4,096,958	5,781,827	7,526,332	6.3	35.2	34.8	33.3
Commercial	2,981,885	3,986,737	5,150,392	5.6	25.6	24.0	22.8
Industrial . . .	4,103,229	6,172,512	9,074,624	8.3	35.2	37.1	40.2
Other	472,134	684,343	822,681	5.7	4.1	4.1	3.6
Total	11,654,207	16,625,419	22,574,029	6.8	100.0	100.0	100.0

Table 10. Utility Retail Sales Statistics, 1986, 1991, and 1996

Item	Investor-Owned Utility	Public	Federal	Cooperative	Total
	1986				
Number of Utilities	5	7	1	8	21
Number of Retail Customers	413,928	11,480	1	14,558	439,967
Retail Sales (MWh)	10,177,133	1,051,250	465	425,359	11,654,207
Percentage of Retail Sales	87.3	9.0	(s)	3.7	100.0
Revenue from Retail Sales (thousand 1996 \$) ^e	817,543	24,625	3	30,014	872,185
Percentage of Revenue	93.7	2.8	(s)	3.4	100.0
1991					
Number of Utilities	4	8	1	9	22
Number of Retail Customers	560,558	14,182	3	19,169	593,912
Retail Sales (MWh)	14,752,651	981,885	17,613	873,270	16,625,419
Percentage of Retail Sales	88.7	5.9	0.1	5.3	100.0
Revenue from Retail Sales (thousand 1996 \$) ^e	969,784	29,387	196	47,945	1,047,336
Percentage of Revenue	92.6	2.8	(s)	4.6	100.0
1996					
Number of Utilities	4	8	1	9	22
Number of Retail Customers	705,219	18,481	2	24,136	747,838
Retail Sales (MWh)	19,741,513	1,236,822	25,844	1,569,850	22,574,029
Percentage of Retail Sales	87.5	5.5	0.1	7.0	100.0
Revenue from Retail Sales (thousand 1996 \$) ^e	1,231,256	37,092	166	73,598	1,342,112
Percentage of Revenue	91.7	2.8	(s)	5.5	100.0

(s) = Nonzero percentage less than 0.05.